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**DEVELOPMENT OF TECHNICAL EDUCATION IN THE CITY OF
KHARKOV: THE CONTRIBUTION OF
VIKENTII KHOMYCH GERBURT-GEIBOVYCH**

Аналізується доробок провідного ученого у галузі механіки – Вікентія Хомича Гербурт-Гейбовича. Подано відомості щодо родини майбутнього ученого. Вчений є випускником Харківського практичного технологічного інституту. Здібному випускнику було запропоновано працювати в цьому навчальному закладі. Показано які предмети викладав вчений. Простежено спадковість у викладанні курсу борошномельного виробництва від учителя - професора К. Зворикіна до учня – В. Гербурт-Гейбовича. Аналізується діяльність ученого щодо розроблення нового курсу лекцій – технологія деревини. Показані його дослідження не лише у галузі механіки, а й ботаніки. Стверджується що В. Гербурт-Гейбович також викладав й гідравліку. Розглянуто експертну роботу вченого, у тому числі щодо обладнання солеварного заводу та будівництва млинів. Розкрито діяльність науковця на посадах заступника голови студентського технічного товариства та голови комітету нужденним студентам ХТІ. Аналізується його внесок у ці організації. Подано відомості про співпрацю В. Гербурт-Гейбовича з Південноросійським товариством технологів, редакцією журналу «Мельник» та виданням «Народна енциклопедія». Підкреслено, що учений був одним із фундаторів Жіночого політехнічного інституту. Розглянуто перші роки функціонування цього новоствореного закладу. Акцентовується увага на значній напруженості у роботі, що призвело до значного ослаблення здоров'я ученого. Завдяки інтерв'ювання родичів ученого відтворено рік його смерті.

Ключові слова: Вікентій Хомич Гербурт-Гейбович, Харківський практичний технологічний інститут, Жіночий політехнічний інститут, борошномельна промисловість, деревообробна промисловість, Народна енциклопедія



At the end of the XIX century at the territory of the Dnieper Ukraine, the formation of two leading higher educational institutions of technical profile took place: in 1885 Kharkiv Practical Technological Institute (now NTU «KhPI») began its activity [1, p. 156], and since 1898 – Kyiv Polytechnic Institute (now NTUU «Igor Sikorsky Kyiv Polytechnic Institute») [2, p. 525]. Since the time of opening of these Institutes, those who wanted to get higher technical education hadn't need for travel abroad for studying.

The public was waiting for the opening of technical institutes not only in Kharkiv and Kyiv provinces, but also in all adjacent territories. Thus, Vikentii Khomych Gerburt-Geibovych from Poltava region became a student of Kharkov Practical Technological Institute. He became one of those who, after the successful graduation from the Institute, stayed in this educational establishment as a teacher. In addition, his further activities contributed to the establishment of higher technical education in Ukraine.

The future scientist was born on September 12, 1872 in the village of Kovalivka of the Poltava district in the family of hereditary nobles – Khoma Antonovich and Stefanida Adalbertovna Gerburt-Gaybovych. In 1890 Vikentii graduated from a real college and entered mechanical department of the Kharkiv Practical Technological Institute. In June 1897 he successfully graduated from this higher educational institution and received the title of engineer-technologist [3, ark. 16].

In 1897 in a view of the expansion of the specialty of the Agricultural Engineering in Institute, it was allowed to increase the contingent of students to 1000 people, and also to expand the student admission in the first year of education to 250 people. Therefore, there was an urgent need to ensure an increase in the KhPTI's teaching staff by talented young people who graduated from the Institute [4, ark. 49 rev., 51].

It should be emphasized that the provision of the teaching staff of KhPTI during the first decade of its existence was mainly due to the involvement of the teaching

staff of the Kharkov Imperial University and production engineers – primarily who graduated from the St. Petersburg Institute of Technology [5, p. 138-139]. However, from the second half of the XIX century KhTPI's graduates became the basis for the formation of the teaching staff of Kharkiv Technological, as well as the Tomsk Technological and Kyiv Polytechnic institutes.

Among the pleiad of the of the KhPTI's first graduates the prominent place is occupied by leading specialist in the field of mechanics – Vikentii Khomych Gerburt-Geibovych. It should be noted that for a long time the name of this scientist was out of the attention of historians of science and technology. Therefore, taking into account the scientific work by V. Kh. Gerburt-Geibovych, as well as the using of archival materials, it is worthwhile the outlining of the results of the scientific activity of this scientist. In the spring of 1898, the Academic Committee of the KhPTI took the decision that V. Kh. Gerburt-Geibovych should be pointed for preparation for the teaching activity as one of the most talented students who have graduated from the Institute in recent years. Members of Academic Committee wrote a petition to the Minister of Popular Education about V. Kh. Gerburt-Geibovych's business trip to the machine-building plants in Russian Empire (to St. Petersburg, Moscow, Riga) from May 15 to September 15, 1898, which would allow him to expand and augment his knowledge about functioning of large machine-building enterprises. Personally acting Director of the Institute D.S. Zernov sent letters to the heads of the leading enterprises of the Russian Empire with a request for a scientific probation of a young scientist. For this he was given 400 rubles pecuniary aid from the Institute [3, ark. 2, 6, 6 rev., 10].

So, from October 13, 1898, V. Kh. Gerburt-Geibovych became a staff teacher of the Kharkov Technological Institute (the name of the institution from May 1898 [6, p. 332]) with a salary of 1200 rubles per year. The young scientist was assigned to carry out lessons on drafting for students of the first and second year of education [3, ark. 17, 19 rev.].

From September 1898 Professor K.O. Zworykin, who taught courses in wood technology and flour-mill production, moved to Kyiv [7, p. 376]. As far back as

spring K.O. Zworykin recommended V. Kh. Gerburt-Geibovych as a decent candidate for teaching of flour mill production course. Taking into account the recommendations and approach to work, it was proposed to send V. Kh. Gerburt-Geibovych next vacation period to the flour mill enterprises. Thus, letters with requesting permission were sent to the Heads of steam mills in the Poltava province, Okhtyrsky district of the Kharkiv province and even to the city of Syzran of Simbirsk province, as well as to the trading house of I.L. Weber of Astrakhan province for a scientific trip of V. Kh. Gerburt-Geibovych [3, ark. 28, 29, 33-36]. From all of these representatives of production KhTI received permissive responses.

Since October, 1899, when the place of the laboratory assistant at the agricultural station was vacated (K.G. Schindler was transferred to the KPI) [8, p. 85], this post was held by V. Kh. Gerburt-Geibovych. He was relieved from teaching the drafting, but instructed to hold classes on the design of turbines and the design of flour-grinding mills [3, ark. 37].

In 1902 the scientist with Professor G. O. Latyshev, on behalf of the Kharkiv Agricultural Society, became one of the organizers of ploughs testing at Yankivsky Estate (Okhtyrsky District) of the merchant P.I. Kharitonenko, who had a powerful sugar and refined production [9]. It should be noted that the enterprises of P.I. Kharitonenko received high awards at industrial and agricultural exhibitions not only in the Russian Empire, but also at the World Exhibitions in Paris and Glasgow in 1900-1901. The company had its own pavilions [10]. Therefore, for scientific research in the field of agriculture, the businessman has consulted with the recognized professionals, which is indirectly confirmed the high knowledge and skills of V. Kh. Gerburt-Geibovych. At the same time, the scientist was involved in the evaluation examination of eight industrial enterprises in the Kharkiv province: refined, sugar mill, distillery, steam mill and four mechanical plants [11, ark. 88].

According to the complex of the achievements of V. Kh. Gerburt-Geibovych, the Academic Committee of KhTI has decided to propose the candidature of the young teacher to the trustee of the Kharkiv educational district as an adjunct professor in mechanical technology [3, ark. 44]. The trustee made a positive decision

and according to order No. 2203 dated 18.02.1903 Vikentii Khomych Gerburt-Geibovych transferred to the post of adjunct professor of KhTI [12, ark. 9 rev.].

The next vacation period of 1904, V. Kh. Gerburt-Geibovych was sent abroad for educational purposes. He visited flour mills, higher and special educational institutions in Germany, France and Switzerland. In particular, he got acquainted with the latest at that time equipment and methods of grain milling and purification in these countries. The results were used to improve the teaching of the course of flour-mill production in KhTI.

Due to the lack of leading specialists in the field of mechanics, the direction of the institute recruited a young scientist to develop new courses that needed extraordinary abilities. Despite the initial specialization in flour-mill production, V. Kh. Gerburt-Geibovych managed to develop several new courses. So, the scientist issued a lecture in wood technology [13]. In this work a general analysis of the wood industry is made, the structure of the tree is given, the role of cellular juice, intercellular substance and cracks are described, heat conductivity and resistance of wood, as well as wood diseases are considered. To develop this course, the scientist needed to have knowledge not only directly from mechanics, but also botany. In addition, he was involved in the development of fundamentally new for KhTI branches of mechanics. So the scientist developed and gave lectures on a new course devoted to turbine-building. Not left out of his attention also the problem of construction of water pipes. In fact V. Kh. Gerburt-Geibovych continued the research, previously started in the KhTI by Professor V.I. Albitsky [12, ark. 54; 14, ark. 21; 3, ark. 77].

Already at the beginning of the XX century young scientist V. Kh. Gerburt-Geibovych became one of the leading scientists and engineers in the KhTI. However, in September 1904, the scientist filed a petition for release, because of heart disease. It is impossible to prove what influenced on his decision. This period was extremely difficult in the functioning of the institute. Because of the so-called «Schiller's History», when students and teachers had opposed to then director of the institute, it

was led to the dismissal of some professors and even the temporary closing of the institution.

Unfortunately, we were unable to find out what the professor did at this time, perhaps he was engaged in his own health, because before that he had never been in vacation. However, due to lack of necessary work experience, the scientist was not granted a pension and despite the state of health already in September 1906 V. Gerburt-Geibovych returned to work at the institute [3, ark. 82]. He was offered the teaching of the course «Flour mills», but the scientist made a proposal to teach hydraulics. This proposal proved to be appropriate, because exactly in September 1906 the resolution was passed by the Student Assembly to the Academic Committee of the Institute, where, in particular, the sixth paragraph was a request for the resignation of Professor V.I. Albitsky – a scientist-hydraulics, the founder of a hydraulic laboratory [15, ark. 1]. Moreover, V. Kh. Gerburt-Geibovych already had his own turbine project [3, ark. 89 rev.]. Therefore, by the decision of the Academic Committee, he was charged with managing the design of turbines for the 4th year students and managing the technical drawing for the first year students [3, ark. 94]. In addition, the scientist was charged with teaching the course on mechanical wood technology. Exactly this course required the improvement; the Institute did not have samples of wood species, as well as equipment for studying their properties. Considering this, a request was made for a business trip of V. Kh. Gerburt-Geibovych, as well as the necessity to buy the appropriate samples of wood [3, ark. 109]. So, for scientific purposes the scientist visited the leading wood-processing enterprises of the Russian Empire.

In fact, at the beginning of the XX century a young scientist became a recognized specialist in several branches of mechanical technology. In particular, he was repeatedly involved in providing scientific advice. Exactly during this period the transition from the use of wind and water mills to steam mills was taking place on the territory of the Dnieper Ukraine. The mechanical equipment of mills was exported mainly from Western European countries. Therefore, V. Kh. Gerburt-Geibovych used his theoretical and practical knowledge in the practical activities of the then industrial

enterprises. Thus, in the years 1910-1911, he gave advice to the association of Anton Erlanger & Co., which specializes in the construction of mills. In 1913 he consulted about equipment of the salt-making plant «Solovekum» in Slavyansk city [16, ark. 83].

In order to maintain an appropriate level of knowledge and exchange of information in 1909, the scientist visited the IX congress of flour mills and the 1st All-Russian flour-grinding exhibition held in St. Petersburg in the so-called «salt city». Due to the fact that the milling industry in the Russian Empire was one of the most organized and developed, as well as through fierce competition with the leading countries of Europe, the merging of flour mills into the All-Union Union took place. According to an internal census of 1909, the Union consisted of 1,500 large and medium-sized enterprises. At the congresses various issues were considered: taxes and fees for mills; about loans; about insurance; about subsidizing flour-mill schools; about the length of working time; about the construction of railways to enterprises and, even, about the publication of the «Melnik» («Miller») magazine, etc. [17]. It should be mentioned that V. Kh. Gerburt-Geibovych was repeatedly published in this magazine. In particular, in 1910, he published his articles «About the article A.M. Erlanger», «Effect on the quality of the flour of forced work of roller machines and prepacking», «About the needing of thorough separation of small impurities before the grain delivering to cockler». Next year, in the magazine «Melnik», he published his article «About cooklers and methods of grain cleaning». In 1911, the scientist was in a scientific trip in Germany, Switzerland, Belgium and Holland, where he inspected the several mills, elevators and factories that produced machines for mills [16, ark. 83; 18, ark. 101 rev., 102].

Another area of scientist's activity was his work as the deputy (at the time «friend») of the Chairman of the student technical society. He held this post in 1909. This society was created on October 8, 1907. Later, on its basis appeared «Labor Commission», «Chemical workshop», as well as «Aerospace workshop named after L.M. Macyevich» [19, ark. 15]. One of the tasks of the student society was the promotion of technical knowledge among students. So in 1909 the work of leading

designer of turbines for hydroelectric power stations Adolf Pffarr «Closed turbines on a horizontal shaft according to Pffarr» was translated from German [20, ark. 1153] [21]. The work was published in the translation of the student technologist M. Gukh under the general editorship of V. Kh. Gerburt-Geibovych. In the publication spiral turbines, their advantages, design features and modifications were shown.

In 1911-1916, V. Kh. Gerburt-Geibovych was the Committee chairman of the Society for the needy students of KhTI. This was a very responsible post. Every month Academic Committee received a request from the students for material assistance. Funds for such payments were provided by citizens from all over the Russian Empire who arranged special evenings, performances for the students of the KhTI, some of them left the wills, where the estates departing in favor of students [22, ark. 3, 11; 23, ark. 1, 16 rev; 24, ark. 7; 25, ark. 8]. The scientist had to consider applications, manage the distribution of funds and made reports. On the pages of «Proceedings of South Russian Association of Technologists» the reports about received funds were published: sponsors were indicated by name and the amount of donations [26, p. 4].

Like other leading teachers, the scientist in 1910–1912 participated in writing of articles for the «People's Encyclopedia». In this multivolume edition during three years 14 volumes in 21 books (volumes and half volumes) were published. The encyclopedia consisted of grouped, separate essays of a scientific and applied nature, united in one or another volume (or half-volume). Despite the purely scientific content, articles were written in popular language. At the end of each article was a large bibliography [27].

In 1912, the Higher Commercial Courses of the Kharkiv Merchant Society were created in the city of Kharkiv. According to the statute, they were assigned to higher education institutions of commercial, political and economic education [28, p. 2]. Leading teachers from Kharkiv University and Technological Institute were involved in teaching. In particular V. Kh. Gerburt-Geibovych worked here in 1914 [3, ark. 159, 160]. The same year, the scientist worked as the secretary of the Academic Committee of KhTI. Because of considerable stress at work V. Kh. Gerburt-

Geibovych again became worse with health and therefore during the autumn semester of 1914/1915 he did not have classes in KhTI, the scientist was treated at a sanatorium [3, ark. 165]. In the following years, the professor often complained of colds and high temperature. Most likely, due to the weakened state, he could not overcome the typhus raged in the city in 1920.

In the works of modern researchers of the history of higher education in Kharkiv, the name of V. Kh. Gerburt-Geibovych is barely mentioned, although his figure as a scientist and his organizational work definitely deserves to be highlighted. Since 1910, the scientist was a member of the Committee of the Southern Russian Society of Technologists. Namely this organization initiated the opening of the first Women's Polytechnic Institute in Ukraine. This institution was solemnly opened on November 14, 1916. By that time, a draft statute, admission rules, curriculum were developed. The local newspaper «Uznyi Kray» («Southern Region») published the rules of admission to the Kharkiv Women's Polytechnic Institute. Interestingly, the entering was carried out without exams, and the tuition fee was 200 rubles per a year. This announcement has caused a lot of interest in women. In just one week, 275 listeners paid for the future training. Donations began to pass to an account of Women's Polytechnic Institute, administration elections were held. Professor I.P. Osipov was elected as a director; he was a director of the KhTI at that time, and the deputy director of the newly established institution became Professor V. Kh. Gerburt-Geibovych [29; 30, p. 132; 31, p. 65].

Vikentii Khomych's enthusiasm for opening a unique educational institution in Kharkiv can be explained by the fact that he was the father of five daughters. In October 1894, he married Lyudmila Grigorievna Pravednikova, had daughters: Lyudmila (25.09.1895), Natalia (14.03.1898), Vera (3.05.1900 years), Alla (December 27, 1901) and Irina (January 3, 1905). The wife of V. Kh. Gerburt-Geibovych studied at the Women's Polytechnic Institute just as their daughter Natalia [3, ark. 193; 32, ark. 2-7; 33, ark. 2-4].

From September 1917 V. Kh. Gerburt-Geibovych was finally appointed an ordinary professor in the department of mechanical technology. He was promoted to

this post in 1912, but in the contest he gave way to V.E. Tir and Ya.V. Stolyarov 1 voice [3, ark. 174, 204 rev.]. This period in the functioning of a higher technical school was marked by the destruction of the pre-revolutionary system of education. The law of July 27, 1917 «About Temporary Improvement of the financial situation of persons serves in the Petrograd, Kharkiv and Tomsk Technological Institutions, the Moscow Higher Technical School and the Riga Polytechnic Institute, and the replacement of some legal acts in these educational institutions» was the beginning of the reorganization of the Institute's management, which lasted the next year. According to the Law, the Academic Committees were renamed to Councils, department – the faculties, director became rector, his assistant – vice rector, professors – ordinary professors, adjunct professors – extraordinary. The management of the scientific and educational part of the faculties was entrusted to the faculties' meeting under the chairmanship of the deans. All cases that were in the competence of the head of the educational district were transferred to the council, faculties and the economic committee. Work and educational programs were changing [34, p. 90; 35, ark. 121]. Therefore, the next year V. Gerburt-Geibovych presented to the Council of KhTI «Project of the division of subjects of mechanical faculty by departments». In particular, the question was raised about the creation of a laboratory for flour-grinding production in KhTI. This project was accepted and approved [3, ark. 190-195]. In addition, in June 1919 Vikentii Khomych elected the vice-rector of the Kharkov Technological Institute [3, ark. 205].

Unfortunately, we can only assume how the scientist would prove himself at this responsible post, in 1920 he and his wife died of typhus. The firm date of death and burial place we could not find out. The middle daughter – Vera died of an appendix, the fourth daughter Alla became a famous person in Kharkiv, she was an illustrator, poet, lived in the famous house «Slovo». The fate of other sisters is unknown.



Sisters Gerburt-Geibovych: Lyudmila, Natalia, Vera, Alla, Irina (a photo from the archive of great-granddaughter of Vikentii Khomych)



Alla Gerburt-Johansen

Thus, Vikentii Khomych Gerburt-Geibovych is one of the leading scientists in the field of mechanical technology, has developed several new courses in KhTI, and was an initiator and administrator of the first Women's polytechnic institute in Ukraine. He actively engaged in public activities, in particular, in the development of student scientific work and the promotion of scientific knowledge. Despite a rather short life course, only 48 years old, the scientist has left a distinctive mark in the history of the Kharkiv Technological Institute, which he graduated from. The memory of prominent ancestor remains among his descendants.

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DEVELOPMENT OF TECHNICAL EDUCATION IN THE CITY OF KHARKOV: THE CONTRIBUTION OF VIKENTII KHOMYCH GERBURT-GEIBOVYCH

The work of the leading scientist in the field of mechanics – Vikentii Khomych Gerburt-Geibovych is analyzed. He became one of those who, after the successful graduation from the Kharkiv Practical Technological Institute, stayed in this educational establishment as a teacher. In addition, his further activities contributed to the establishment of higher technical education in Ukraine.

It should be noted that for a long time the name of this scientist was out of the attention of historians of science and technology. Therefore, taking into account the scientific work by V. Gerburt-Geibovych, as well as the using of archival materials, it is worthwhile the outlining of the results of the scientific activity of this scientist.

Information about the future scientist's family is provided. In particular, it is stated that he was from a noble family. The talented graduate of KhPTI was invited to work at this educational institution. It is shown what subjects the scientist taught. Heredity in teaching the course of flour-mill production from the teacher – Professor K. Zworykin to the student – V. Gerburt-Geibovych was traced. The information about the probation of a scientist at the enterprises of Russian Empire is considered.

V. Gerburt-Geibovych's formation as a scientist is shown. For example in 1902 the scientist with Professor G. O. Latyshev, on behalf of the Kharkiv Agricultural Society, became one of the organizers of ploughs testing at Yankivsky Estate of the

merchant P.I. Kharitonenko. In order to maintain an appropriate level of knowledge and exchange of information in 1909, the scientist visited the IX congress of flour mills and the 1st All-Russian flour-grinding exhibition held in St. Petersburg in the so-called «salt city». In 1911, the scientist was in a scientific trip in Germany, Switzerland, Belgium and Holland, where he inspected the several mills, elevators and factories that produced machines for mills.

The activity of the scientist in the development of a new course of lectures – wood technology is analyzed. His research not only in the field of mechanics but also in botany is shown.

The expert work of the scientist, including in the equipping of the salt-making plant and in the designing of mills, is shown. The activity of the scientist at the posts of the deputy chairman of the Student technical society and the chairman of the Committee for the needy students of KhTI are considered. Every month Academic Committee received a request from the students for material assistance. Funds for such payments were provided by citizens from all over the Russian Empire who arranged special evenings, performances for the students of the KhTI, some of them left the wills, where the estates departing in favor of students. The scientist had to consider applications, manage the distribution of funds and made reports. On the pages of «Proceedings of South Russian Association of Technologists» the reports about received funds were published: sponsors were indicated by name and the amount of donations

The information about cooperation of V.Gerburt-Geibovych with the Southern Russian Society of Technologists, the editorial office of the «Melnyk» magazine and the edition "People's Encyclopedia" was provided. In particular, in 1910, he published his articles «About the article A.M. Erlanger», «Effect on the quality of the flour of forced work of roller machines and prepacking», «About the needing of thorough separation of small impurities before the grain delivering to cockler». Next year, in the magazine «Melnyk», he published his article «About cooklers and methods of grain cleaning».

It was shown that the scientist was one of the founders of women's polytechnic education in Ukraine. The presence of five daughters in the family became a significant incentive for Vikentii Khomych to open the Women's Polytechnic Institute in Kharkiv. The first years of functioning of this newly created institution are considered. It is alleged that wife of a scientist and one of the daughters graduated from the Women's Polytechnic Institute. In addition, in June 1919 Vikentii Khomych elected the vice-rector of the Kharkov Technological Institute. Emphasis is made on significant stress in the work, which led to a weakening of the scientist's health. Thanks to interviewing of relatives of the scientist, the year of his death was ascertained.

Despite a rather short life course, only 48 years old, the scientist has left a distinctive mark in the history of the Kharkiv Technological Institute, which he graduated from. The memory of prominent ancestor remains among his descendants.

Keywords: *Vikentii Khomych Gerburt-Geibovych, Kharkiv Practical Technological Institute, Women's Polytechnic Institute, flour-mill production, wood industry, People's Encyclopedia.*